Alberta

OCCUPATIONAL HEALTH AND SAFETY

COMPETENCY ANALYSIS PROFILES AND PERFORMANCE STANDARDS

for Workers, Foremen, Site Supervisors & Health & Safety Consultants Working at Asbestos Removal, Abatement or Demolition Sites

ALBERTA
OCCUPATIONAL HEALTH AND SAFETY

November 1988

89-04808/

Acknowledgments

Alberta Occupational Health and Safety is pleased to present this report. It is hoped that it will be of use to workers, employers, educators, and health and safety professionals involved with asbestos removal or control.

This report was developed cooperatively by the members of the Working Party on Competency in Asbestos Removal and Control. The Working Party consisted of representatives from a broad range of organizations across Alberta, including organized labour, industry, educational institutions, health and safety professionals and government agencies. I would like to thank the members of this group for their continued support and their diligent efforts in developing these documents. I would also like to thank Dave Turner of Principle Resource Management and Lilian Soltaniuk for their consultant support.

The competency analysis profiles and standards of performance which are contained within this report reflect the opinions expressed by the working party. Specifically, these opinions focus on the competencies required of asbestos workers, foremen, site supervisors and health and safety consultants practising in Alberta. The competencies for the various occupational groups outlined within this report may change over time and may require periodic review. If the profiles and performance standards are to be used for applications other than those outlined in this document, validation is essential to determine the accuracy of the base profiles, the regional differences and the relevance to the application.

D. E. Gibson, Director
Chairman,
Working Party on Competency in
Removal of Asbestos

Table of Contents

	Page
Introduction	1
Development of Profiles & Performance Standards	1
Application	2
Summary	4
Competency Analysis Profile: Workers	5
Standards of Performance: Workers	6
Competency Analysis Profile: Foremen	9
Standards of Performance: Foremen	10
Competency Analysis Profile: Site Supervisors	14
Standards of Performance: Site Supervisors	15
Competency Analysis Profile: Health & Safety Consultants	20
Standards of Performance: Health & Safety Consultants	21

INTRODUCTION

Over the past few years, there has been growing concern about the adequacy of health and safety precautions used in asbestos removal and control projects. In response to this valid concern, a working party was established in June, 1986 to address this problem. Their objective was to define competencies and to develop profiles for key persons involved in asbestos removal or control projects.

The Competency Analysis Profiles (CAP) and the Standards of Performance presented in this report define the major skills and performance standards for four different groups working at asbestos removal, abatement or demolition sites. These groups include workers, foremen, site supervisors and health and safety consultants.

DEVELOPMENT OF PROFILES AND PERFORMANCE STANDARDS

The Competency Analysis Profile System was originally developed by Manuel and Deane* and was designed to be used in developing curricula for training programs. Their system consists of developing and validating competency analysis profiles, developing performance objectives and developing learning modules. For the purposes of this report, only profiles and performance standards were developed. They were based on Manuel and Deane* system with some modifications applied to the development of both. The method used did not involve validating the profiles nor developing learning modules for the competencies.

In general, these profiles were developed by a working group which represented a cross-section of individuals working in or involved with the asbestos removal industry. Through a process of brainstorming, competencies were identified for each of the four occupational groups

*Manuel, D. & Deane, A. (April, 1976). A flexible training system. Canadian Vacation Journal, pp. 19-22.

referred to in this report. The information was compiled and profiles were prepared. The working group was then sub-divided into smaller groups where the accompanying standards of performance for each skill were developed. Each stage of the developmental process included review and consent by the whole working party before proceeding to the next stage.

The profiles and performance standards which were completed for each occupational group comprise the body of this publication. The layout of each profile is presented so that the major responsibilities are located in the extreme left-hand column and the skills for each major responsibility are presented in a row of boxes to their right. The layout of the standards of performance which accompany each profile lists the relevant performance objectives for each skill.

APPLICATION

The hazards associated with asbestos abatement procedures are well recognized. The need for competency in these work procedures is critical to eliminate the exposure to these hazards. The Competency Analysis Profiles and Standards of Performance outlined in this report can be used as tools to meet this need. Specific applications include:

1. Staffing Decisions

   Many organizations have difficulty in determining their manpower needs for their removal or abatement projects. The different profiles will assist decision-makers in selecting staff who are able to perform at the appropriate levels of responsibilities for their projects. For example, decision-makers may need to decide whether a site supervisor or foreman is required for a particular job. The responsibilities, skills and performance standards described for each can help the decision-maker to decide which type of worker is most appropriate for the job.

2. Hiring Tool

When hiring a worker, foreman, site supervisor or health and safety consultant for asbestos removal or abatement projects, the organization can examine the major responsibilities, skills and performance standards required for these projects by using these profiles. Upon determining which responsibilities, skills and performance standards are required, the organization can design the hiring criteria and the interview process to match these needs. This approach allows for the selection of workers with skills most appropriate to the job.

3. Design and Evaluation of Course Curricula

The CAP system provides an excellent source of information to educators in asbestos abatement training. The information within the CAP system can be used to help design the course curricula and to help review and modify the curricular programs as well.

4. Training Tool

These profiles can be used to develop new or modify existing training modules for asbestos abatement. When developing classroom or on-site training modules, there may be some overlapping of skills within each profile. By grouping the closely related skills and developing training modules for the groups rather than the individual skills, more efficient training modules will result. When evaluating and revising existing training programs, these profiles can be used to eliminate over- and under-training which should improve the efficiency of these training programs as well.

5. Performance Appraisal

Competency analysis profiles and standards of performance can be used with a formal appraisal system to objectively monitor and appraise individual performance. Performance appraisals which include feedback to the worker can enhance the development of competency in the skills being learned.

6. Compliance With Legislation

Only competent workers or workers directly supervised by competent workers can perform work which may endanger any worker [AR 448/83, 14(2)]. These profiles and performance standards can be used by both companies and enforcement bodies to ensure that asbestos removal work is being carried out by competent workers.

SUMMARY

The CAP and performance standards along with various other job analysis or evaluation techniques can be used as part of an organization's human resource development planning. When used properly, the CAP system can be a valuable tool in developing and selecting competent personnel. It can supplement the process of establishing program or individual objectives, the process of performance appraisals and the development and upgrading of training programs.

It cannot be used to evaluate personalities nor individual characteristics. If it is to be considered for applications other than those intended, validation is required. Finally, competencies may change over time as a result of technological advancements and may benefit from periodic review and updating.

COMPETENCY PROFILE FOR WORKERS
ON ASBESTOS REMOVAL/ABATEMENT/DEMOLITION SITES

MAJOR RESPONSIBILITES

SKILLS

JOB EXECUTION
A

- **A1** REVIEW WORK PROCEDURES WITH SUPERVISOR
- **A2** IDENTIFY MATERIAL SUPPLY NEEDS
- **A3** MAINTAIN SITE AND SERVICES
- **A4** ISOLATE WORK AREA
- **A5** INSTALL NEGATIVE PRESSURE AIR SYSTEM
- **A6** SET UP DECONTAMINATION FACILITY
- **A7** MINIMIZE FIBRES IN THE AIR
- **A8** MAINTAIN GOOD HOUSEKEEPING
- **A9** PREPARE WASTE MATERIAL FOR DISPOSAL
- **A10** MAINTAIN DECONTAMINATION FACILITY
- **A11** OPERATE ASBESTOS REMOVAL EQUIPMENT
- **A12** MAINTAIN ASBESTOS REMOVAL EQUIPMENT

HEALTH & SAFETY
B

- **B1** REVIEW HEALTH & SAFETY PROCEDURES WITH SUPERVISOR
- **B2** DEMONSTRATE A KNOWLEDGE OF HEALTH HAZARDS OF ASBESTOS
- **B3** DEMONSTRATE KNOWLEDGE OF REQUIREMENTS, RESPONSIBILITIES & RIGHTS UNDER OH&S LEGISLATION
- **B4** REPORT VIOLATIONS OF HEALTH & SAFETY REQUIREMENTS
- **B5** REPORT POTENTIAL SITE SAFETY HAZARDS
- **B6** REPORT POTENTIAL ELECTRICAL HAZARDS
- **B7** USE & MAINTAIN PROPER PERSONAL PROTECTIVE EQUIPMENT
- **B8** USE DECONTAMINATION FACILITY
- **B9** REPORT WORKER HEALTH PROBLEMS

COMPETENCY PROFILE FOR WORKERS ON ASBESTOS-REMOVAL/ABATEMENT/DEMOLITION SITE

STANDARDS OF PERFORMANCE

A: JOB EXECUTION

Skill

A1 Review Work Procedures With Supervisor:

- a - Verify with the immediate supervisor all work procedures.
- b - Visually inspect the job with the foreman.
- c - Discuss concerns/problems of job with the foreman.
- d - Recommend changes in procedures when necessary.
- e - Implement work procedures as agreed to with foreman.

A2 Identify Material Supply Needs:

- a - Report shortages of materials and supplies to the foreman.
- b - Determine needs for special supplies and request them through the foreman.

A3 Maintain Site and Services:

- a - Repair damage to the enclosure and report the damage to the first line foreman.
- b - Report any interruption to or insufficiency in water, power or lighting to the foreman.

A4 Isolate Work Area:

- a - Rope off all areas of work.
- b - Properly post signs outside the contaminated area.
- c - Maintain air-tight isolated work areas.
- d - Post the entrance and exit points.
- e - Assemble the air lock as directed.
- f - Seal air handling system as directed.

A5 Install Negative Pressure Air System:

- a - Install the negative pressure air system.
- b - Seal the negative pressure air system as directed.
- c - Visually inspect the work site to confirm that negative pressure is established in the enclosed area.

A6 Set Up Decontamination Facility:

- a - Construct the decontamination facility as directed.
- b - Report any sanitation supply shortages to the foreman.

A7 Minimize Fibres in the Air:

- a - Follow established procedures for control of asbestos, i.e.:
  - Saturate asbestos and contaminated material where practicable.
  - Encapsulate all areas as directed.
  - Contain waste material as soon as possible.
  - Employ practical and safe practice in handling material for disposal.

A8 Maintain Good Housekeeping:

a - Follow established work procedures as directed.
b - Use an approved vacuum system to clean up dry material.
c - Place waste material in containers, seal, and remove to disposal area.
d - Decontaminate all tools, scaffolding and equipment prior to removal from the work site.

A9 Prepare Waste Material for Disposal:

a - Use effective techniques to minimize airborne fibre release during removal of isolation enclosures.
b - Take care to prevent punctures to bagged material.
c - Clean the exterior of the bags prior to the removal to the transfer area.
d - Double-bag waste material and seal.
e - Mark waste material with approved label.
f - Store waste material in established storage area.

A10 Maintain Decontamination Facility:

a - Maintain a housekeeping schedule.
b - Clean and sanitize floors and walls.
c - Repair air locks as directed.
d - Maintain services for decontamination facility.

A11 Operate Asbestos Removal Equipment:

a - Be able to demonstrate procedures for safe operation of removal equipment being used on the work site.
b - Notify foreman and gain approval on any equipment modification.

A12 Maintain Asbestos Removal Equipment:

a - Perform maintenance and minor repairs to equipment as directed by the foreman.
b - Check filter on Negative Pressure Air System as required or directed.
c - Report the need for all repairs to equipment to the foreman.

B: HEALTH AND SAFETY

Skill

B1 Review Health and Safety Procedures With Supervisor:

a - Check with foreman on the health and safety procedures to be followed on the job.
b - Be able to explain why procedures have to be followed.
c - Review with foreman, the emergency procedure to be followed.

B2 Demonstrate a Knowledge of Health Hazards of Asbestos:

a - Describe the specific health hazards that could be encountered through asbestos exposure.
b - Describe the increased risks of smoking and asbestos exposure.

B3 Demonstrate Knowedge of Requirements, Responsibilities and Rights Under OH&S Legislation:

a - Recognize the limitations of the respiratory protective equipment that is being used on work site according to the dust conditions and exposure level expected.
b - Describe situations where the worker has the right to refuse work that is unsafe.
c - Cooperate in health monitoring by the employer.
d - Perform work according to the "Code of Practice" or established safety standards (both company and Occupational Health and Safety regulations) for asbestos removal.

B4 Report Violations of Health and Safety Requirements:

a - Report any violations of safe work procedures to the foreman.
b - If violations continue, report them to Occupational Health and Safety.

B5 Report Potential Site Safety Hazards:

a - Report potential site safety hazards to the foreman.
b - Rope off area until hazard is corrected.
c - Don't use unsafe equipment.

B6 Report Potential Electrical Hazards:

a - Report any electrical hazards to the foreman.
b - Rope off and restrict the area until hazard is eliminated.
c - Use a ground fault interrupter system.

B7 Use and Maintain Proper Personal Protective Equipment:

a - Demonstrate proper fitting, use and maintenance of respirators, including filter replacement.
b - Use disposable clothing provided according to the work site procedures.
c - Decontaminate footwear used in the work site as directed.

B8 Use Decontamination Facility:

a - Follow established procedures for leaving contaminated area.
b - Remove all contaminated clothing and place in isolation containers provided.
c - Maintain a cleaning schedule on the contaminated side of the decontamination facility to minimize the fibre level.
d - After showering (with respirator on), remove filters (if applicable) and dispose of them in containers provided.
e - Place all towels in the recycling containers provided.
f - Clean and disinfect the respirators.
g - Maintain a housekeeping schedule in the decontamination facility.
h - Treat all equipment, tools, and clothing used inside the contaminated area as contaminated material and remove only through a decontamination facility.

B9 Report Worker Health Problems:

a - Watch for and assist any co-worker showing signs of physical or temperature stress.
b - Report any relevant worker health concerns.

COMPETENCY PROFILE FOR FOREMEN
ON ASBESTOS REMOVAL/ABATEMENT/DEMOLITION SITES

MAJOR RESPONSIBILITES

SKILLS

MAJOR RESPONSIBILITES						
JOB EXECUTION A	**A1** VALIDATE SITE CONDITIONS	**A2** ENSURE ISOLATION OF WORK AREA	**A3** ENSURE INSTALLATION OF THE NEGATIVE PRESSURE AIR SYSTEM	**A4** CHECK THE SET-UP OF DECONTAMINATION FACILITY	**A5** MINIMIZE FIBRES IN THE AIR	**A6** MONITOR AIR TESTING EQUIPMENT
	A7 IDENTIFY MATERIAL SUPPLY NEEDS	**A8** ENSURE PROPER OPERATION OF EQUIPMENT	**A9** ENSURE MAINTENANCE OF EQUIPMENT	**A10** IMPLEMENT ABATEMENT PROCEDURES		
SUPERVISION B	**B1** PLAN AND ASSIGN DAILY WORK	**B2** REVIEW WORK PROCEDURES WITH WORKERS	**B3** REVIEW HEALTH & SAFETY PROCEDURES WITH WORKERS	**B4** MONITOR WORKER PERFORMANCE	**B5** MONITOR USE OF MATERIALS	**B6** ENSURE USE OF DECONTAMINATION FACILITY
	B7 ENSURE ADEQUACY OF FIRST AID	**B8** RECOGNIZE AND ACT ON WORKER HEALTH PROBLEMS	**B9** ENSURE MAINTENANCE OF SITE AND SERVICES			
HEALTH & SAFETY C	**C1** EXPLAIN HEALTH HAZARDS OF ASBESTOS	**C2** DEMONSTRATE KNOWLEDGE OF REQUIREMENTS, RESPONSIBILITIES AND RIGHTS UNDER OH&S LEGISLATION	**C3** INSPECT AND ACT ON HEALTH & SAFETY HAZARDS	**C4** MONITOR & ENSURE COMPLIANCE WITH HEALTH & SAFETY PROCEDURES	**C5** ENSURE CONTROL OF ELECTRICAL HAZARDS	**C6** ENSURE USE & MAINTENANCE OF PERSONAL PROTECTIVE EQUIPMENT
	C7 ENSURE MAINTENANCE OF DECONTAMINATION FACILITY	**C8** MONITOR THE PREPARATION OF WASTE MATERIALS FOR DISPOSAL	**C9** ENSURE GOOD HOUSEKEEPING			

COMPETENCY PROFILE FOR FOREMEN ON ASBESTOS-REMOVAL/ABATEMENT/DEMOLITION SITES

STANDARDS OF PERFORMANCE

A. JOB EXECUTION

Skill

A1 Validate Site Conditions:

- a - Identify and locate essential services and work areas prior to job set-up.
- b - Review site access and equipment set-up with supervisor prior to job set-up.
- c - Review site-specific concerns (i.e., unusual work routines or site conditions).

A2 Ensure Isolation of Work Area:

- a - Review isolation procedures with supervisor prior to project start-up.
- b - Implement isolation procedures as per work plan prior to start of removal process.
- c - Ensure that isolation of work areas during removal is maintained.
- d - Ensure sealing of heating, ventilation and air-conditioning systems according to work plan, and review prior to starting any removal.

A3 Ensure Installation of the Negative Pressure Air System:

- a - Ensure installation and testing of negative pressure air system according to work plan or as directed.
- b - Visually inspect the work site to confirm that the negative pressure air is established in the enclosed area.

A4 Check the Set-up of Decontamination Facility:

- a - Construct and equip decontamination centre according to work plan or as instructed by supervisor.
- b - Have decontamination centre completed prior to start of the removal phase.

A5 Minimize Fibres in the Air:

- a - Implement control procedures to minimize potential airborne fibres during the removal process.
- b - Visually check work procedures and correct as necessary.

A6 Monitor Air Testing Equipment:

- a - Monitor air sampling equipment during sample period to ensure continuous operation.

A7 Identify Material Supply Needs:

- a - Manage materials required for the job.
- b - Maintain an inventory of materials and equipment.
- c - Report material needs to supervisor to ensure a constant supply.

A8 Ensure Proper Operation of Equipment:

a - Ensure proper and safe operation of all equipment by verifying workers' knowledge as to the correct and safe operation of all equipment.
b - Demonstrate proper and safe use of equipment to workers as required.

A9 Ensure Maintenance of Equipment:

a - Inspect equipment for proper maintenance.
b - Train workers in proper maintenance of equipment.
c - Identify and correct any equipment failure.
d - Maintain an inventory of equipment parts and materials.
e - Ensure proper decontamination or containment of equipment upon job completion.

A10 Implement Abatement Procedures:

a - Implement agreed-to abatement procedures, i.e., remove, encapsulate, or enclose.
b - Monitor worker adherence to abatement procedures.
c - Correct any observed deviations from the abatement procedures.
d - Ensure that correct waste handling, transportation and disposal procedures are used.

B: SUPERVISION

Skill

B1 Plan and Assign Daily Work:

a - Plan and assign workers and equipment according to task and worker experience.
b - Check worker understanding of assigned task(s).

B2 Review Work Procedures With Workers:

a - Provide worker orientation to work procedures, emphasizing health and safety, decontamination, material handling, supplies, equipment, and area security.

B3 Review Health and Safety Procedures With Workers:

a - Discuss critical health and safety topics with workers.
b - Highlight and explain problem areas and question workers for understanding.
c - Clarify any changes to safety procedures.
d - Identify and show workers evacuation routes and emergency procedures.

B4 Monitor Worker Performance:

a - Observe and correct performance of workers in:
- personal safety equipment,
- work practices,
- handling of materials and proper preparation for transport/disposal, and effective and complete removal, encapsulation, or enclosure of asbestos.

B5 Monitor Use of Materials:

a - Ensure that sufficient materials are on hand.
b - Correct abuse and misuse of materials.
c - Maintain and reorder supplies as needed.
d - Validate supplies ordered and received.

B6 Ensure Use of Decontamination Facility:

a - Train workers in proper use of decontamination facility according to work procedures.
b - Verify by spot checks that workers are using decontamination facility correctly.
c - Correct deviations of workers' use of decontamination facility.

B7 Ensure Adequacy of First Aid:

a - Identify the on-site first aid person or first aid station to all workers.
b - Verify daily that adequate first aid supplies are on site.
c - Ensure that first aid person/station possesses a current certificate.

B8 Recognize and Act on Worker Health Problems:

a - Rotate staff if necessary to avoid physical or temperature stresses.
b - Observe workers, on an ongoing basis, for stress symptoms.
c - Reassign, immediately, workers with symptoms of stress.

B9 Ensure Maintenance of Site and Services:

a - Check regularly the services to the site.
b - Rectify any interruption to services.

C: HEALTH AND SAFETY

Skill

C1 Explain Health Hazards of Asbestos:

a - Explain health hazards of asbestos exposure to workers.
b - Explain the increased risk of smoking combined with asbestos exposure.
c - Indoctrinate workers as to health and safety procedures prior to starting the job.

C2 Demonstration Knowledge of Requirements, Responsibilities and Rights Under OH&S Legislation:

a - Demonstrate working knowledge of regulations applicable to asbestos abatement procedures for the project being undertaken.
b - Identify requirements and procedures outlined in the Act and the Regulations.
c - Reinforce the rules when a violation is observed.
d - Outline and discuss responsibilities and requirements of employers and workers as defined in the Act and the Regulations.

C3 Inspect and Act on Health and Safety Hazards:

a - Monitor site for health and safety hazards on an ongoing basis.
b - Visually inspect site for violations of the established health and safety procedures.
c - Ensure that hazard warning signs are posted.

C4 Monitor and Ensure Compliance With Health and Safety Procedures:

a - Take corrective action to stop any violation of health and safety practices.
b - Ensure that all safety standards are followed, i.e. scaffolding/ladders, safety belts, eye protection, respirators, barriers, hazard signs, etc.
c - Report to supervisor any ongoing violations and describe corrective action taken.

C5 Ensure Control of Electrical Hazards:

a - Ensure, where possible, that all electrical circuits are "locked out" prior to starting work on the job.
b - Check to ensure that circuits are locked out at the beginning of each shift.
c - Ensure that ground fault system is checked by qualified person prior to job start-up and when repairs are required.

C6 Ensure Use and Maintenance of Personal Protective Equipment:

a - Observe worker use of personal protective equipment and correct any violations of standard procedures.
b - Check the maintenance of personal protective equipment daily.
c - Correct any infraction of maintenance procedures of personal protective equipment.

C7 Ensure Maintenance of Decontamination Facility:

a - Monitor the integrity of the decontamination facility, including air locks.
b - Maintain and correct immediately any failure in the decontamination facility or air locks.

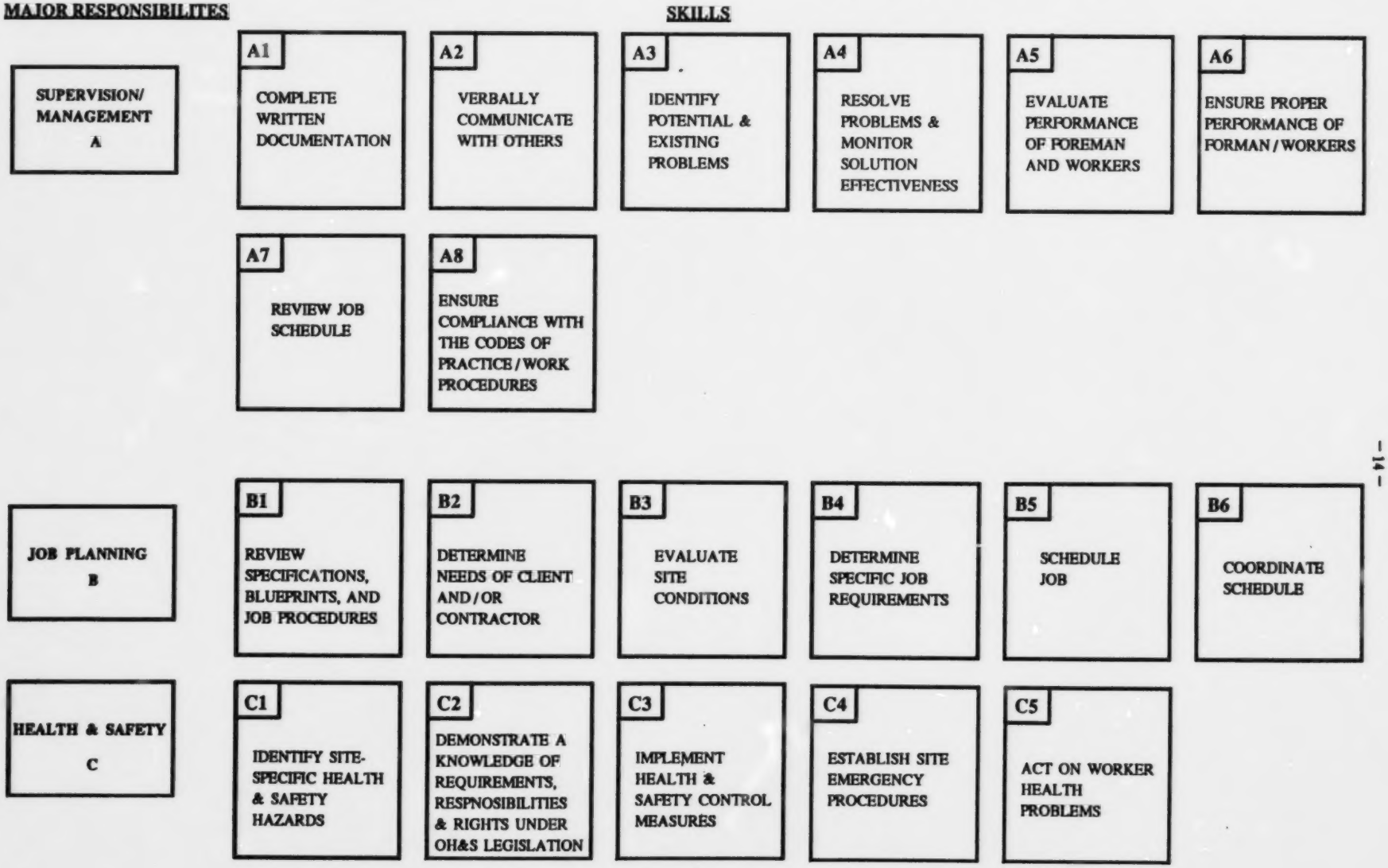
C8 Monitor the Preparation of Waste Materials for Disposal:

a - Observe and correct any violations of the handling of waste and hazardous material prior to removal from the worksite.
b - Monitor and correct improper handling of contaminated clothing.
c - Check all equipment for proper decontamination prior to removal from the work site.

C9 Ensure Good Housekeeping:

a - Establish and maintain a clean-up schedule that is monitored at least once per shift.
b - Monitor and ensure the maintenance of the decontamination facility.

COMPETENCY PROFILE FOR SITE SUPERVISORS ON ASBESTOS REMOVAL/ABATEMENT/DEMOLITION SITES



STANDARDS OF PERFORMANCE

COMPETENCY PROFILE FOR SITE SUPERVISORS ON ASBESTOS-REMOVAL/ABATEMENT/DEMOLITION SITES

A. SUPERVISION/MANAGEMENT

Skill

A1 Complete Written Documentation:

- a - Develop a written site-specific code of practice/job procedures.
- b - Maintain daily work logs.
- c - Complete progress reports.
- d - Fill out required forms and permits.
- e - Develop a written work plan.
- f - Develop contingency plans, as required.
- g - Maintain training records of site personnel.

A2 Verbally Communicate With Others:

- a - Explain work plan to foreman and workers.
- b - Solicit input from foreman and workers.
- c - Question foreman and workers for their understanding of work plans.
- d - Describe or clarify standards required.
- e - Negotiate differences of opinion.
- f - Direct others on completion of work assignments.
- g - Negotiate special job needs with client/contractor (e.g. job and access safety needs).
- h - Instruct affected people on site, as required.
- i - Communicate with the government occupational health and safety and environment agencies.

A3 Identify Potential and Existing Problems:

- a - Review with owner, site conditions.
- b - Examine blueprints and specifications if available.
- c - Visually inspect site to note actual site conditions. Determine hazards or problem areas such as eletrical, mechanical (e.g. operating equipment), computers, or other dust/moisture-sensitive equipment.
- d - Review layout and design of containment barriers with respect to security.
- e - Observe effectiveness of restrictions (unauthorized personnel entry) to area.
- f - Inspect site to verify compliance with OH&S regulations or owner requirements.

A4 Resolve Problems and Monitor Solution Effectiveness:

- a - Solve site safety problems with site safety personnel and/or OH&S Division.
- b - Arrange for removal/protection of sensitive equipment with owner (e.g., computers, electronic equipment, word processors, etc.).
- c - Monitor operations of removal equipment.
- d - Conduct scheduled checks of area and equipment.

A5 Evaluate Performance of Foreman and Workers:

a - Evaluate adherence to procedures/codes of practice through observation and communication.
b - Monitor workers'/foremen's use of decontamination facility.
c - Monitor workers'/foremen's use of protective equipment and supplies.
d - Observe for effective supervision of workers by foreman.
e - Observe for health and safety performance of workers/foremen.
f - Monitor the workers/foremen for compliance with asbestos disposal procedures.

A6 Ensure Proper Performance of Foreman/Workers:

a - Ensure that workers and foremen comply with correct work procedures and codes of practice.
b - Act as an example for safe work practices.
c - Discipline workers as required.
d - Ensure competence of worker/foreman for assigned tasks.

A7 Review Job Schedule:

a - Check for crew rotation to avoid stress and improve efficiency.
b - Collaborate with foremen on the assignment of workers for optimal performance.

A8 Ensure Compliance With the Codes of Practice/Work Procedures:

a - Review established code of practice/work procedures with the foreman.
b - Ensure that foreman reviews with workers codes of practice/work procedures.
c - Ensure that workers/foremen are trained with respect to codes of practice-/work procedures.
d - Explain to workers/foremen the penalties of failing to comply with the codes of practice.

B. JOB PLANNING

Skill

B1 Review Specifications, Blueprints, and Job Procedures:

a - Collect information for job requirements.
b - Review specifications, documentation and job procedures with management and other involved parties (e.g. owner, client, architect, health and safety consultant, foreman, employee representative, occupant, etc.).
c - Cross-reference job procedures to job specifications.

B2 Determine Needs of Client and/or Contractor:

a - Identify responsibilities of contractor and client.
b - Determine specific requirements of contractor or client.
c - Determine with the consultant the scope of air monitoring required.
d - Identify and inform the client of potentially affected parties on and off site.
e - Outline for the client, site security requirements.

B3 Evaluate Site Conditions:

a - Identify water and power sources.
b - Identify health and safety hazards present.
c - List pre-job deficiencies of site conditions.
d - Determine if background fibre counts are required.
e - Identify sites for decontamination unit, waste storage, assembly room, disposal room, entry and egress, etc.

B4 Determine Specific Job Requirements:

a - Identify any site-specific concerns that affect contingency plans.
b - Identify specific job requirements (water and electrical).

B5 Schedule Job:

a - Determine manpower, materials and equipment requirements.
b - Schedule ordering of necessary materials, tools and equipment.
c - Set up work schedule to include rotation of workers.
d - Schedule sequence of job performance.
e - Schedule work periods (duration, frequency).
f - Schedule construction of decontamination facility.
g - Schedule disposal of waste materials.
h - Schedule additional client requirements (e.g., shift work).

B6 Coordinate Schedule:

a - Establish schedule with other trades and affected parties.
b - Coordinate material requirements with suppliers.
c - Coordinate air monitoring requirements.
d - Coordinate with Laboratory for air sampling analysis.

C. HEALTH AND SAFETY

Skill

C1 Identify Site-Specific Health and Safety Hazards:

a - Visually inspect site for specific health and safety hazards, prior to job start.
b - Perform regular daily inspections to monitor for unexpected health and safety hazards.

C2 Demonstrate a Knowledge of Requirements, Responsibilities and Rights Under OH&S Legislation:

a - Select appropriate work procedures (e.g. wet or dry abatement).
b - Determine the appropriate respiratory protective equipment to be used.
c - Identify the required monitoring of worker health as per regulations/ standards.
d - Outline right-to-refuse legislation and codes of practice legislation to foreman.
e - Outline and explain current Alberta OH&S legislation which relates to the job site to foreman and client.

C3 Implement Health and Safety Control Measures:

a - Take corrective action on any health and safety problem identified during inspections.
b - Ensure that work plan and procedures are implemented.
c - Ensure that workers have been adequately trained and continually upgraded to a competent level.
d - Provide protection of others who are required to come on site (e.g., ambulance attendant).
e - Implement site security plan.

C4 Establish Site Emergency Procedures:

a - Provide fire protection and ensure that personnel are competently trained in equipment use.
b - Establish emergency entrance/exit plan.
c - Ensure that competent first aid is available and advise all personnel of location.
d - Ensure that all foremen and workers can carry out procedures for medical emergencies (e.g. heart attack - disregard decontamination procedure for life-threatening circumstances).

C5 Act on Worker Health Problems:

a - Ensure that staff rotation occurs as planned and revise plan as required.
b - Check that foreman is observing workers on an ongoing basis to recognize environmental stress symptoms (e.g., heat, noise, chemical stress, etc.).
c - Ensure that foreman takes immediate action with workers experiencing symptoms of stress.

D. JOB EXECUTION

Skill

D1 Verify Work Plan and Specific Job Requirement:

a - Visually check site conditions daily to ensure adherence to work plan.
b - Ensure proper dismantling of containment at job completion.
c - Ensure proper decontamination of all equipment prior to it leaving site.

D2 Inspect Isolation of Work and Storage Areas:

a - Examine integrity of enclosure.
b - Check installation and operation of negative pressure air system.
c - Check the proper set-up of decontamination facility, at the beginning of the job and on an ongoing basis.
d - Inspect for the proper set-up of storage areas, at the beginning of the job and on a daily basis.

D3 Advise Associated Trades of Specific Work Issues and Schedule:

a - Coordinate work schedules with other trades as determined in the job planning.
b - Advise other trades of hazards in the job that could affect them.
c - Review with other trades any changes to schedule.

D4 Coordinate Air Monitoring:

a - Ensure that air monitoring is being carried out as required.
b - Ensure that the samples are forwarded promptly for evaluation and study.
c - Implement report results and change to work procedures where necessary.
d - Determine if more monitoring is necessary during changes to the work procedures (e.g. dry removal, wet removal).

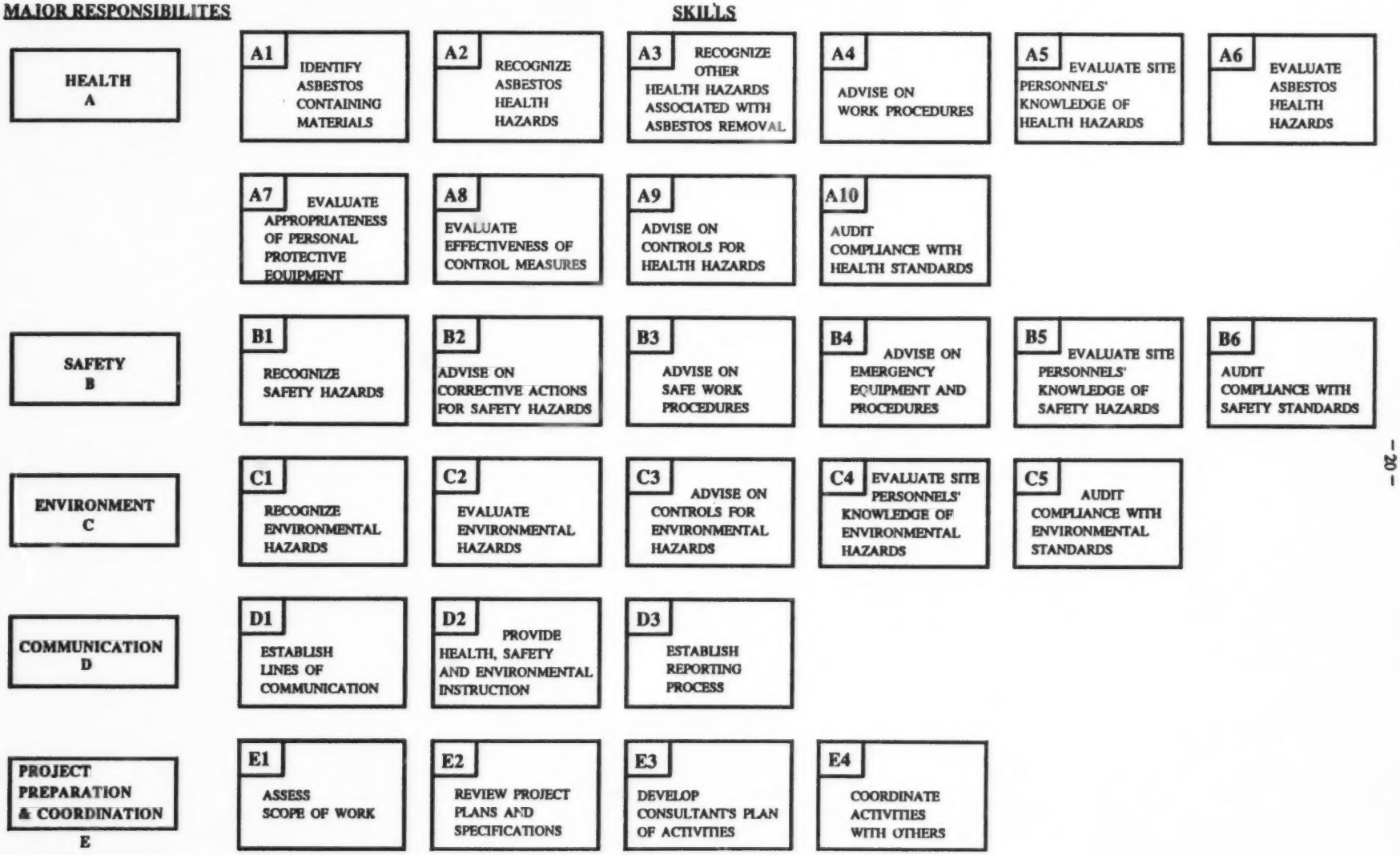
D5 Maintain Job Schedule:

a - Monitor the job schedule to make sure jobs are completed as planned.
b - Reschedule changes with workers, other trades and client.

D6 Order and/or Purchase Supplies and Equipment:

a - Plan the equipment and material needs with foreman on a daily basis.
b - Order material and equipment as needed.
c - Verify that ordered material and equipment arrives.
d - Receive and distribute supplies.

COMPETENCY PROFILE FOR HEALTH & SAFETY CONSULTANTS (SITE-SPECIFIC) ON ASBESTOS REMOVAL/ABATEMENT/DEMOLITION SITES


MAJOR RESPONSIBILITES
SKILLS
HEALTH
A
A1 IDENTIFY ASBESTOS CONTAINING MATERIALS
A2 RECOGNIZE ASBESTOS HEALTH HAZARDS
A3 RECOGNIZE OTHER HEALTH HAZARDS ASSOCIATED WITH ASBESTOS REMOVAL
A4 ADVISE ON WORK PROCEDURES
A5 EVALUATE SITE PERSONNELS' KNOWLEDGE OF HEALTH HAZARDS
A6 EVALUATE ASBESTOS HEALTH HAZARDS
A7 EVALUATE APPROPRIATENESS OF PERSONAL PROTECTIVE EQUIPMENT
A8 EVALUATE EFFECTIVENESS OF CONTROL MEASURES
A9 ADVISE ON CONTROLS FOR HEALTH HAZARDS
A10 AUDIT COMPLIANCE WITH HEALTH STANDARDS
SAFETY
B
B1 RECOGNIZE SAFETY HAZARDS
B2 ADVISE ON CORRECTIVE ACTIONS FOR SAFETY HAZARDS
B3 ADVISE ON SAFE WORK PROCEDURES
B4 ADVISE ON EMERGENCY EQUIPMENT AND PROCEDURES
B5 EVALUATE SITE PERSONNELS' KNOWLEDGE OF SAFETY HAZARDS
B6 AUDIT COMPLIANCE WITH SAFETY STANDARDS
ENVIRONMENT
C
C1 RECOGNIZE ENVIRONMENTAL HAZARDS
C2 EVALUATE ENVIRONMENTAL HAZARDS
C3 ADVISE ON CONTROLS FOR ENVIRONMENTAL HAZARDS
C4 EVALUATE SITE PERSONNELS' KNOWLEDGE OF ENVIRONMENTAL HAZARDS
C5 AUDIT COMPLIANCE WITH ENVIRONMENTAL STANDARDS
COMMUNICATION
D
D1 ESTABLISH LINES OF COMMUNICATION
D2 PROVIDE HEALTH, SAFETY AND ENVIRONMENTAL INSTRUCTION
D3 ESTABLISH REPORTING PROCESS
PROJECT PREPARATION & COORDINATION
E
E1 ASSESS SCOPE OF WORK
E2 REVIEW PROJECT PLANS AND SPECIFICATIONS
E3 DEVELOP CONSULTANT'S PLAN OF ACTIVITIES
E4 COORDINATE ACTIVITIES WITH OTHERS

STANDARDS OF PERFORMANCE

COMPETENCY PROFILE FOR HEALTH & SAFETY CONSULTANTS (SITE-SPECIFIC) AT ASBESTOS REMOVAL/ABATEMENT/DEMOLITION SITES

A. HEALTH

Skill

A1 Identify Asbestos-Containing Materials:

- a - Identify and locate where asbestos-containing materials may be present.
- b - Recognize the type(s) of asbestos.
- c - Properly carry out bulk sampling and analysis for identification of asbestos in materials, and interpret the results.

A2 Recognize Asbestos Health Hazards:

- a - Visually inspect the work site for signs of asbestos exposure.
- b - Locate the asbestos hazards.
- c - Assess the risks from the pre-abatement sampling results.
- d - Anticipate the health hazards associated with any changes to the work site procedures.

A3 Recognize Other Health Hazards Associated With Asbestos Removal:

- a - Describe symptoms of heat stress, dermatitis, noise, ergonomic, and other non-asbestos health stressors.
- b - Visually inspect the work site and identify the stressors.
- c - Monitor workers for signs of distress.
- d - Identify if monitoring for non-asbestos health hazards is required and advise the employer.
- e - Interpret and assess results of non-asbestos health hazards (heat stress, noise, radiation, etc.).

A4 Advise on Work Procedures:

- a - Review and discuss written work site procedures with contractor and/or client.
- b - Advise on developing codes of practice (asbestos, RPE, confined space entry).
- c - Monitor site for proper work procedures and provide recommendations for solving problems.

A5 Evaluate Site Personnels' Knowledge of Health Hazards:

- a - Question site personnel (workers, foremen, site supervisor) on asbestos and non-asbestos health hazards.
- b - Evaluate site personnels' knowledge on health hazards, abatement procedures and control measures.
- c - Develop recommendations to correct skill or knowledge deficiencies in workers, foremen and supervisors.

A6 Evaluate Asbestos Health Hazards:

a - Evaluate work site for key hazard areas prior to asbestos removal/ abatement.
b - Determine number and location of air samples to be collected.
c - Check for proper sampling techniques, competent lab analysis, and data interpretations.
d - Inspect the security of air samples.

A7 Evaluate Appropriateness of Personal Protective Equipment:

a - Describe and implement current practices and requirements of personal protective equipment (PPE) and respiratory protective equipment (RPE).
b - Ensure that PPE and RPE have been appropriately selected to maximize health protection.
c - Determine the need for medical assessment prior to respirator usage.
d - Check that selection, fit, usage and maintenance of RPE are adequate to protect the worker.
e - Review the Code of Practice for RPE with supervisors and foremen, and observe the work site for its implementation.
f - Observe and correct any inappropriate usage and maintenance of protective clothing.

A8 Evaluate Effectiveness of Control Measures:

a - Examine contractor's equipment (e.g. negative air pressure system, ventilation system) for proper operation.
b - Evaluate integrity of enclosure, effectiveness of segregation of area, etc.
c - Evaluate post-removal/abatement air monitoring.
d - Evaluate the work site for proper decontamination procedures (worker,equipment and work site).

A9 Advise on Controls for Health Hazards:

a - Advise on the integrity of containment structure.
b - Recommend strategies for control (e.g., safe work practices).

A10 Audit Compliance With Health Standards:

a - Interpret and describe current health regulations under the OH&S Act.
b - Monitor site to ensure that work site specifications and proper work procedures are followed.
c - Monitor site to ensure conformance to the codes of practice.
d - Advise site supervisor on the need for medical surveillance (distress from asbestos and non-asbestos health hazards, PPE and RPE).
e - Inspect for compliance with health regulations under the OH&S Act.

B. SAFETY

Skill

B1 Recognize Safety Hazards:

a - Identify and evaluate potential safety hazards associated with asbestos removal/abatement projects.
b - Visually inspect the work site for electrical, scaffolding, tripping, slipping, fire hazards, etc.

B2 Advise on Corrective Actions for Safety Hazards:

a - Report safety problems to client/contractor.
b - Advise client/contractor on proper training procedures, housekeeping, PPE, etc.
c - Assist in solving safety hazards that occur on site.

B3 Advise on Safe Work Procedures:

a - Assist in developing safe work procedures and codes of practice.
b - Assess and provide support for the training of personnel.

B4 Advise on Emergency Equipment and Procedures:

a - Identify potential emergency hazards.
b - Assist in developing and improving emergency response procedures.
c - Assist in developing and improving fire procedures.
d - Monitor safe handling of equipment and make recommendations as necessary.
e - Assist in delivering emergency procedure training sessions.
f - Monitor site for compliance with regulations and standards associated with emergency situations (fire regulations, building and first aid standards) and report non-compliance to site supervisor.

B5 Evaluate Site Personnels' Knowledge of Safety Hazards:

a - Question site personnel (workers/foremen/site supervisors) on related safety hazards.
b - Observe site personnel work practices for adherence to safety procedures.
c - Develop recommendations to correct skill or knowledge deficiencies in workers, foremen and supervisors.

B6 Audit Compliance With Safety Standards:

a - Advise on current safety regulations under the OH&S Act.
b - Monitor site to ensure that work site specifications and safe work procedures are followed.
c - Monitor work site for conformance to the codes of practice.
d - Inspect for compliance with safety regulations under the OH&S Act.

C. ENVIRONMENT

Skill

C1 Recognize Environmental Hazards:

a - Identify potential environmental hazards associated with asbestos removal/abatement.
b - Inspect air and water filtration systems in relation to the abatement project.
c - Inspect integrity of enclosure for leaks.
d - Inspect disposal, labelling and transportation procedures.

C2 Evaluate Environmental Hazards:

a - Examine area for air, water and soil contamination.
b - Review disposal, labelling and transportation procedures.

C3 Advise on Controls for Environmental Hazards:

a - Recommend improvements to the air/water filtration systems.
b - Recommend sampling, packaging and disposal procedures.

C4 Evaluate Site Personnels' Knowledge of Environmental Hazards:

a - Question site personnel (workers, foremen, site supervisors) on dealing with environmental hazards.
b - Assess site personnels' skill in dealing with environmental hazards, and disposal procedures.
c - Develop recommendations to correct skill or knowledge deficiencies in workers, foremen and supervisors.

C5 Audit Compliance With Environmental Standards:

a - Advise on current environmental, transportation, and disposal regulations (Federal, Provincial, Municipal).
b - Inspect for compliance with environmental regulations.
c - Inspect for compliance with transportation and disposal regulations.

D. COMMUNICATION

Skill

D1 Establish Lines of Communication:

a - Identify who needs to be informed and establish the communication link.
b - Establish reporting procedure with client/contractor.
c - Determine the persons responsible for decisions on the site, and the level of authority of each.
d - Set out a communication process with the client/contractor.
e - Establish roles and expectations with client/contractor and consultant.
f - Establish and maintain contact with professionals in the health, safety and environmental fields.

D2 Provide Health, Safety and Environmental Instruction:

a - Train supervisors on RPE fit, usage, limitations and proper maintenance procedures.
b - Train supervisors on current emergency, decontamination and proper work procedures.
c - Assist, as requested, in delivering training sessions to workers.
d - Conduct meetings to promote health and safety.
e - Interpret for others, health, safety and environmental standards.

D3 Establish Reporting Process:

a - Communicate oral and written information through established communication links.
b - Set out agendas for meetings.
c - Prepare presentations, allowing room for discussion.
d - Establish a record-keeping procedure.
e - Collect, interpret and evaluate data.
f - Prepare reports that focus on key issues.
g - Solicit feedback on reports, recommendations and action from client/contractor.

E. PROJECT PREPARATION AND COORDINATION

Skill

E1 Assess Scope of Work:

a - Review specific job requirements.
b - Review decontamination requirements.
c - Determine if an adequate assessment of the scope of the work has been made.
d - Negotiate additional contractor/client needs (site-specific).
e - Assess, on an on-going basis, job requirements/client or contractor needs.

E2 Review Project Plans and Specifications:

a - Collect and review the contractor's/client's plans and specifications, and building plans and specifications, if available.
b - Identify contractor's/client's approach to the project.
c - Evaluate site-specific requirements.
d - Recommend amendment to plans and specifications if necessary.

E3 Develop Consultant's Plan of Activities:

a - Plan activities to meet contractor's/client's needs.
b - Develop consultants' schedules and allocate equipment resources.
c - Anticipate changes and develop contingency plans.

E4 Coordinate Activities With Others:

a - Organize consulting activities to coincide with the work plan.
b - Coordinate contingency plans with supervisor/foreman.
c - Negotiate special needs/activities with supervisor/foreman.

FURTHER INFORMATION

For further information on Compentency Analysis Profiles contact Occupational Health and Safety at:

4th Floor, 10709 Jasper Avenue
EDMONTON, Alberta T5J 3N3
(403) 427-2687

To report violations or to discuss specific work site procedures/practises contact Occupational Health and Safety at:

9821 - 48 Street
Edmonton, Alberta T6B 2R4
(403) 427-4792

or

2nd Fl., 1021 - 10 Ave. S.W.
Calgary, Alberta T2R 0B7
(403) 297-2222

To obtain copies of this publication contact Occupational Health and Safety at:

6th Floor, 10709 Jasper Ave.
Edmonton, Alberta T5J 3N3
(403) 427-5549

or

2nd Fl., 1021 - 10 Ave. S.W.
Calgary, Alberta T2R 0B7
(403) 297-7282

APPENDIX

COMPETENCY ANALYSIS PROFILE SYSTEM

COMPETENCY ANALYSIS PROFILE (CAP)*

The Competency Profile Analysis System developed by Manuel and Deane (1976) is a competency-based learning system. The CAP System is a process designed to be used in the development of cirriculum for training programs (particularly for adult training programs).

The CAP System rests on four assumptions:

1. Persons currently working in the occupation have the most relevant information about competencies required to function satisfactorily in that field.

2. Relative importance of one competency versus another can be adequately established by having a larger group in the same occupational specialization validate the base CA Profile.

3. A team approach for preparation of learning materials is best, because of the paucity of individuals with a thorough knowledge of both the theoretical and practical aspects of a given occupation and the ability to design and develop a learning system.

4. Efficiency in training is essential. Minimum criterion levels for each competency must be established to avoid the inefficiency associated with over-training of some competencies and under-training of others.

The Competency Profile Analysis System consists of five major phases.

Phase I involves the development of a base Competency Analysis Profile (CAP). A CAP is a representation of a task or job function broken down into its associated major duties and the competencies required to satisfactorily carry out each major duty. A small group of practitioners (8 to 12 people) is selected to represent a cross-section of the occupation. Through a process of modified brain-storming, a profile of competencies is identified as specific to the occupation.

In **Phase II**, the basic CAP is validated. Validation is essential to determine accuracy of the base profile, identify regional or specialization differences, and determine relative priorities of the various competencies. A larger cross-section of practitioners from the occupation is surveyed using the base profile as a working paper. The survey may be by personal interview or mailed questionnaire, depending on prevailing conditions. Respondents are requested to examine each competency and rate according to a predetermined scale. Responses are tabulated, priorities determined and occupational specializations within the larger occupation, if any, identified.

Phase III involves the preparation of performance objectives for each competency block. A small group is assembled, composed of 2-3 education experts with competence in preparing objectives, 2-3 content experts, and 2-3 of the original

*Excerpted from Alberta Workers' Health, Safety and Compensation, Occupational Health and Safety Division. Competency Analysis Profile. Occupational Hygiene Technologists, pp. 21-23.

profile participants. Kind and level of terminal objectives for each competency are developed, incorporating one of four levels for each of the three domains of learning. Examples are shown in Figure 3. The educational experts then prepare enabling performance objectives and identify learning activities.

Figure 3

CRITERION CATEGORIES AND LEVELS

COGNITIVE COMPONENT

Level 1 (Knowledge) Be able to learn facts and basic knowledge.
Level 2 (Comprehension) Be able to interpret facts and use in one's own frame of reference. Be able to use facts in simple applications (usually when repeating what one has already seen in an example).
Level 3 (Application) Be able to use facts and knowledge in a new situation.
Level 4 (Analysis, Synthesis and Evaluation) Be able to work out causes behind problems; find.

AFFECTIVE COMPONENT

Level 1 (Receiving) Be willing to examine new ideas and information, and recognize that others may have different positions.
Level 2 (Responding) Be able to react to new ideas, information and position of others. Reaction will be in the form of voluntary discussion, debate, etc. with others.
Level 3 (Form a Value) Be able to select appropriate social behavior. For example, have concern for others, be willing to participate, attack problem situations from a positive point of view, etc.
Level 4 (Practice a Value) Be able to use established values in everyday activities. Be concerned with the values of others and accept one's own strengths and limitations. Be willing to accept other differing values, and generally realize the need to apply systematic planning in solving problems.

PSYCHOMOTOR COMPONENT

Level 1 (Identify) Be able to identify the physical tasks to be performed.
Level 2 (Prepare) Be able to prepare oneself for the tasks. Be able to select the right equipment, identify the proper sequences, pay attention to safety and overcome fear of the task.
Level 3 (Imitate) Be able to try the skill for the first time, usually imitating the actions of another skilled person. Be able to select and use proper techniques.
Level 4 (Perform) Be able to perform the skill with sufficient speed and accuracy to be independently successful as a proficient operator.
(Source: Manuel and Deane, 1976)

Phases IV and V involve the development of modules by combining or splitting some competencies. The modules then represent groups of competencies which can be learned in the same learning environment. Learning resources are then developed for each module. These resources can range from interactive printed material through the whole range of instructional media, to guidance on appropriate learning environments.